

Abstract of the Disclosure

A composite material is provided that includes laminated layers, an optical fiber, and a demodulator. The layers define a surface portion generally parallel to the layers and an edge portion generally perpendicular to the layers. The optical fiber and demodulator are embedded in the material. The demodulator is optically coupled to the optical fiber and demodulates light transmitted through the optical fiber. A method of monitoring the health of a structural member, which includes a composite material having an optical fiber, is also provided. The method includes demodulating light from the optical fiber using a demodulator embedded in the composite material. Also, a signal representative of the demodulated light is received and interpreted as a condition of the composite material.